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UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 390

Contribution from the Office of Public Roads and Rural Engineering
LOGAN WALLER PAGE, Director

Washington, D. C. ▼ January 12, 1917

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PUBLIC ROAD MILEAGE AND REVENUES IN THE UNITED STATES, 1914

A SUMMARY

(Based upon Bulletins 386, 387, 388, and 389)

SHOWING FOR EACH STATE TOTAL AND SURFACED MILEAGE OF PUBLIC ROADS AT THE CLOSE OF 1914, REVENUES FOR ROADS AND BRIDGES IN 1914, STATE AND LOCAL ROAD AND BRIDGE BONDS OUTSTANDING JANUARY 1, 1915, AND OTHER RELATED DATA

PREPARED JOINTLY BY THE DIVISION OF ROAD ECONOMICS OF THE OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING AND STATE COLLABORATORS

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PUBLIC ROAD MILEAGE AND REVENUES IN THE UNITED STATES, 1914. A SUMMARY.

(Based upon Bulletins 386, 387, 388, and 389)

Showing for Each State Total and Surfaced Mileage of Public Roads at the close of 1914, Revenues for Roads and Bridges in 1914, State and Local Road and Bridge Bonds Outstanding on January 1, 1915, and Other Related Data.

PREPARED JOINTLY BY THE DIVISION OF ROAD ECONOMICS OF THE OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING AND STATE COLLABORATORS.

INTRODUCTORY.

In 1904 the Office of Public Roads adopted the policy of conducting at five-year intervals an investigation to determine the mileage of improved and unimproved roads, the revenues for road purposes, and other related data. In accordance with that policy, Bulletin No. 32 of the Office of Public Roads was issued for the calendar year 1904, and Bulletin No. 41 for the calendar year 1909. Both bulletins were based largely on data obtained by correspondence. The investigation made for the year 1914 followed somewhat different lines. A closer cooperation with State highway departments was maintained, and wherever practicable the information was collected directly by collaborators named by the respective State highway departments and acting under specific instructions from this office. This policy was not practicable in connection with earlier bulletins owing to the fact that most of the States then had no established highway departments.

In several of the States, either because no highway departments existed in 1914 or for other reasons, information was collected by this office directly from local authorities. In the course of the investigation it was found necessary to enlist the aid of local and State road associations, chambers of commerce, automobile clubs, postmasters, and private individuals in order to obtain even reasonably complete information. Highway accounting systems and

methods, especially in the local subdivisions of States, are, in general, far from satisfactory. In many places the records were found to be so indefinite or so incomplete that the most careful investigation failed to determine even the bare total of what funds had been expended on roads and bridges during the previous years. At times the memory of some official or employee seemed a better guide than the permanent existing records.

Lack of definite data and records by the local subdivisions is even more pronounced as to road mileage. Hundreds of instances were discovered where the local officials could give no more than a rough estimate, as maps had not been prepared or measurement of the roads been made. This lack of definite information in some of the States accounts for the fact that the total mileage of roads reported in 1914 was considerably greater than in 1909, while the mileage of surfaced roads reported in 1914 was less than the mileage reported for 1909. The data on mileage and revenues from some of the States should, therefore, of necessity, be considered as approximate. The statistics for each State have been checked, as far as practicable, by the collaborators or by the State highway departments, and it is believed that the 1914 investigation is more complete and accurate than either of the former investigations.

For convenient reference and to avoid delay in publication, the information obtained has been prepared for publication in a series of four bulletins, as follows: Middle Atlantic States, Bulletin 386; Southern States, Bulletin 387; New England States, Bulletin 388; and the Central, Mountain, and Pacific States, Bulletin 389.

In this publication the information contained in the foregoing bulletins is summarized and presented in a series of tables, as follows:

GENERAL SUMMARY.

TABLE 1.—Mileage and revenues and the relation of these to area, population, rural population, and assessed valuation, for the United States as a whole.

PUBLIC ROAD REVENUES.

TABLE 2.—Revenues applied to roads and bridges in the various States in 1914, with comparative information for the year 1904. It will be seen from this table that the total revenue applied to roads and bridges in the United States in 1914 amounted to $240,263,784. This includes State appropriations, motor vehicle registration and license fees, amounts derived from local taxation, and expenditures from State and local bond issues. In 1904 the total revenue applied to this purpose amounted to $79,623,616, thus showing an increase for the 10-year period of $160,640,168, or 201.75 per cent.

ANALYSIS OF REVENUES ON VARIOUS BASES.

TABLE 3.—The relation of road and bridge revenue to mileage, area, population, and assessed valuation, 1914 and 1904.

A study of this table will show that, while the revenue available for road purposes increased from $37.01 per mile in 1904 to $98.22 per mile in 1914—an increase of 165 per cent—the actual financial burden upon the taxpayers did not increase in the same ratio. This was due to the fact that property values increased during the same period to such an extent that whereas the average tax burden per $100 of assessed property value was 23 cents in 1904, it had increased to only 35 cents in 1914, an increase of 52 per cent, or less than one-third the rate of increase in the road fund.

ROAD AND BRIDGE BONDS.

TABLE 4.—State and local road and bridge bonds outstanding January 1, 1915.

These amounted to $344,763,082, comprising $115,324,500 of State bonds and $229,438,582 of local bonds. State bonds have been issued in California, Connecticut, Idaho, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, Utah, and Washington, and were authorized in New Mexico in 1912, but not sold until 1915. The constitutions of Kansas, South Dakota, and Wyoming prohibit these States from participating in works of internal improvement, and consequently, from issuing State bonds.

ROAD MILEAGE.

TABLE 5.—Total and surfaced mileage of roads in the various States, as of January 1, 1915, with comparative information for 1904 and 1909.

It will be seen from this table that on January 1, 1915, there was in the United States a total of 2,445,761 miles of road, of which 257,291.54 miles, or 10.52 per cent, were surfaced. This does not include the streets in incorporated cities and towns. By comparing these figures with those obtained in former investigations, it appears that between 1909 and 1914, 66,824 miles of road were surfaced. (Fig. 1.)

ANALYSIS OF MILEAGE ON VARIOUS BASES.

TABLE 6 shows the relation of total mileage and surfaced mileage to area and rural population for the years 1904, 1909, and 1914.

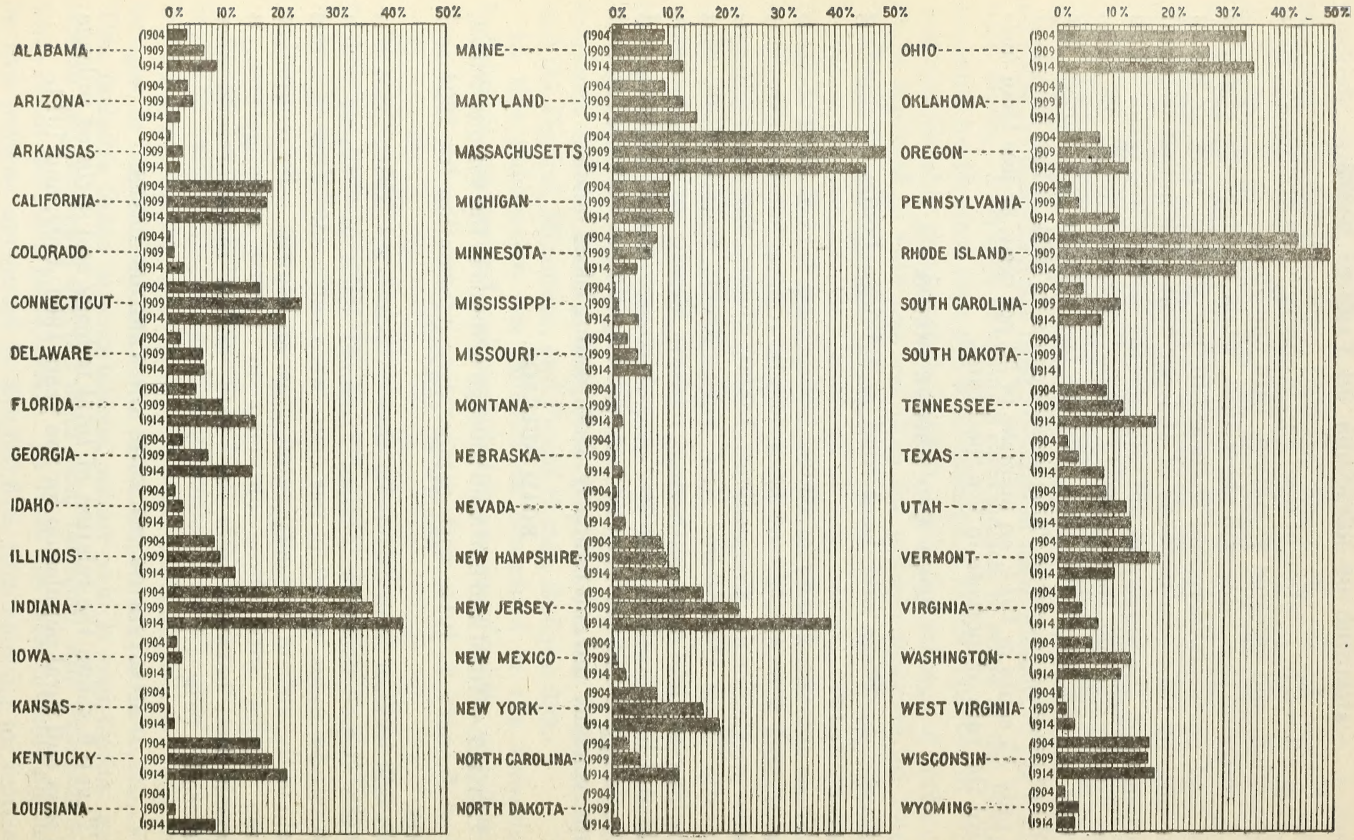

FIG. 1.—Percentage of improved roads in each State—1904, 1909, and 1914.

TYPES OF SURFACED ROADS.

TABLE 7 shows the distribution of types of surfaced roads in the various States on January 1, 1915. Of the 257,291.54 miles of surfaced roads in the United States on January 1, 1915, 116,058.12 miles, or 45.11 per cent, were gravel; 64,898.43 miles, or 25.22 per cent, were macadam; 44,154.73 miles, or 17.16 per cent, were sand clay; 10,499.79 miles, or 4.08 per cent, were bituminous macadam; 2,348.43 miles, or 0.91 per cent, were concrete; 1,593.88 miles, or 0.62 per cent, were brick, and 17,738.16 miles, or 6.90 per cent, were surfaced with various materials.

TABLE 1.—*Road mileage, revenue, and other related data for the United States, 1914, 1909, 1904.*[1]

	1914	1909	1904
Total road mileage	2,445,761	2,199,645	2,151,379
Surfaced mileage	257,291.54	190,476.32	153,530.4
Percentage surfaced	10.5	8.66	7.14
Total revenue	$240,263,784.46	[2]	$79,623,616.56
State and local road and bridge bonds outstanding Jan. 1, 1915	$344,763,082.32	[2]	[2]
Land area (square miles)	[3] 2,973,830	[3] 2,973,830	[4] 2,974,099
Population	[3] 91,641,197	[3] 91,641,197	[4] 75,715,857
Rural population	[3] 49,348,883	[3] 49,348,883	[4] 45,197,390
Assessed valuation	[5] $69,093,003,851	[5] $69,093,003,851	[6] $35,114,924,911
Miles of road per square mile of area	0.82	0.74	0.72
Miles of road per 1,000 of rural population	49.5	44.6	47.6
Surfaced mileage per square mile of area	0.086	0.064	0.052
Surfaced mileage per 1,000 of rural population	5.21	3.86	3.39
Road and bridge revenue per mile of road	$98.22	[2]	$37.01
Road and bridge revenue per square mile of area	$80.79	[2]	$26.77
Road and bridge revenue per capita	$2.62	[2]	$1.05
Road and bridge revenue per $100 assessed value	$0.35	[2]	$0.23

[1] Exclusive of District of Columbia, Alaska, and island possessions. [2] No information obtained.
[3] 1910. [4] 1900. [5] 1912. [6] 1902.

Miles of road surfaced between 1909 and 1914, 66,815.22.

TABLE 2.—*Revenue applied to roads and bridges.*

States.	Total revenue applied to roads and bridges.		Increase in revenue over 1904.	
	1914	1904	Total increase.	Percentage of increase.
Alabama	$3,949,019.00	$1,576,434.27	$2,372,584.73	150.50
Arizona	982,721.22	109,309.43	873,411.79	799.00
Arkansas	1,522,696.20	1,395,342.80	127,353.40	9.10
California	19,171,984.66	2,157,396.36	17,014,588.30	786.60
Colorado	1,937,546.23	707,223.63	1,230,322.60	173.96
Connecticut	3,640,962.75	1,195,125.01	2,445,837.74	204.60
Delaware	511,628.00	90,802.88	420,825.12	463.40
Florida	2,280,255.09	577,577.10	1,702,677.99	294.70
Georgia	3,688,172.25	2,080,872.33	1,607,299.92	77.20
Idaho	1,371,468.59	311,588.00	1,059,880.59	340.00
Illinois	8,734,712.77	4,210,950.23	4,523,762.54	107.42
Indiana	14,233,985.93	4,335,108.00	9,898,877.93	228.34
Iowa	10,187,507.32	3,106,607.50	7,080,899.82	227.92
Kansas	5,544,048.00	1,232,817.45	4,311,230.55	349.70
Kentucky	2,474,621.00	2,148,689.03	325,931.97	15.10
Louisiana	1,777,572.12	951,872.86	825,699.26	86.70
Maine	2,642,006.79	1,472,393.70	1,169,613.09	79.43
Maryland	6,000,652.03	873,470.50	5,127,181.53	586.90
Massachusetts	6,091,875.30	2,871,222.47	3,220,652.83	112.20
Michigan	9,261,998.00	3,179,787.88	6,082,210.12	191.27
Minnesota	6,458,940.07	1,961,629.24	4,497,310.83	229.26
Mississippi	3,960,377.00	1,675,485.45	2,284,891.55	136.30
Missouri	5,513,048.71	2,368,972.79	3,144,075.92	132.72
Montana	2,888,400.61	404,097.81	2,484,302.80	614.77
Nebraska	1,796,277.69	878,547.40	917,730.29	104.40
Nevada	245,013.65	46,875.85	198,137.80	422.68
New Hampshire	1,590,464.11	872,606.35	717,857.76	82.20
New Jersey	7,208,287.08	3,274,811.25	3,933,475.83	120.00
New Mexico	556,398.82	165,651.56	390,747.26	235.88
New York	23,231,964.02	5,692,514.82	17,539,449.20	308.00
North Carolina	5,215,490.78	1,358,687.00	3,856,803.78	283.80
North Dakota	2,402,383.52	550,340.72	1,852,042.80	436.52
Ohio	14,334,245.98	5,706,083.61	8,628,162.37	151.23
Oklahoma	2,112,680.80	774,775.59	1,337,905.21	172.60
Oregon	5,310,466.76	796,375.97	4,514,090.79	566.84
Pennsylvania	10,424,580.00	4,887,265.68	5,537,314.32	113.20
Rhode Island	446,496.05	405,010.85	41,485.20	10.20
South Carolina	1,024,480.37	745,701.50	278,778.87	37.40
South Dakota	1,217,809.42	383,283.07	834,526.35	217.73
Tennessee	2,370,560.16	1,621,777.15	748,783.01	46.10
Texas	9,920,079.11	4,138,157.49	5,781,921.62	139.70
Utah	803,070.63	218,675.78	584,394.85	267.24
Vermont	1,023,941.01	567,397.33	456,543.68	80.46
Virginia	3,224,528.82	687,751.06	2,536,777.76	368.80
Washington	7,944,717.38	1,436,070.19	6,508,647.19	453.22
West Virginia	2,483,747.00	893,285.28	1,590,461.72	178.00
Wisconsin	9,880,240.50	2,181,262.38	7,698,978.12	352.26
Wyoming	669,661.16	345,931.73	323,729.43	93.58
Total	240,263,784.46	79,623,616.33	160,640,168.13	201.75

TABLE 3.—*Relation of public road and bridge revenues to mileage, area, population, and assessed valuation, 1914 and 1904.*

States.	Revenues.							
	Per mile of road.		Per square mile of area.		Per capita.		Per $100 of assessed valuation.	
	1914	1904	1914	1904	1914 [1]	1904 [2]	1914 [3]	1904 [4]
Alabama	$71.22	$31.47	$77.01	$30.74	$1.840	$0.86	$0.6900	$0.530
Arizona	81.38	18.25	8.63	.96	4.810	.89	.7000	.270
Arkansas	30.00	38.28	28.99	26.56	.960	1.06	.3600	.620
California	314.09	46.24	123.17	13.82	8.060	1.45	.6600	.170
Colorado	48.70	23.40	18.69	6.82	2.420	1.31	.4600	.200
Connecticut	258.90	84.84	755.50	248.10	3.260	1.32	.3500	.180
Delaware	139.25	30.26	260.37	46.21	2.520	.49	.5450	.131
Florida	126.71	33.24	41.56	10.52	3.020	1.09	1.0700	.560
Georgia	45.72	36.37	62.80	35.43	1.410	.93	.4370	.440
Idaho	56.22	17.15	16.45	3.73	4.210	1.92	.8200	.510
Illinois	91.32	44.73	155.85	75.19	1.540	.87	.3700	.410
Indiana	194.06	63.46	394.89	120.80	5.270	1.72	.7500	.310
Iowa	97.88	30.32	183.27	55.89	4.580	1.39	1.1300	.540
Kansas	49.92	12.18	67.79	15.07	3.280	.83	.2000	.340
Kentucky	42.52	37.60	61.58	53.47	1.080	1.00	.2390	.300
Louisiana	72.37	38.23	39.10	20.96	1.073	.68	.3220	.300
Maine	112.25	57.68	88.37	49.29	3.550	2.12	.6330	.418
Maryland	364.60	52.07	603.62	87.86	4.630	.73	.4850	.120
Massachusetts	326.08	167.99	758.00	357.40	1.810	1.02	.1270	.092
Michigan	124.84	45.88	161.13	55.32	3.290	1.31	.4000	.220
Minnesota	69.06	24.72	79.88	24.26	3.110	1.12	.4400	.260
Mississippi	86.51	43.29	85.42	36.13	2.200	1.08	.9620	.770
Missouri	57.40	21.90	80.22	34.47	1.670	.76	.3000	.190
Montana	73.67	18.02	19.75	2.76	7.680	1.66	.8300	.220
Nebraska	22.37	11.05	23.38	11.43	1.510	.82	.3900	.490
Nevada	20.11	3.72	2.23	.42	2.990	1.10	.2400	.160
New Hampshire	113.44	57.72	176.11	96.62	3.690	2.12	.3620	.427
New Jersey	486.49	220.64	959.00	435.00	2.830	1.73	.2890	.340
New Mexico	46.86	10.80	4.54	1.35	1.690	.84	.7700	.430
New York	292.60	77.05	467.00	114.00	2.540	.79	.2080	.095
North Carolina	102.75	27.30	107.00	27.87	2.360	.71	.6970	.390
North Dakota	34.92	9.28	34.23	7.84	4.160	1.72	.6800	.410
Ohio	165.99	82.17	351.84	140.06	3.000	1.37	.2200	.290
Oklahoma	19.57	17.79	30.45	11.16	1.274	1.94	.1769	.870
Oregon	144.23	23.24	55.54	8.33	7.890	1.92	.5900	.540
Pennsylvania	113.86	48.98	232.00	109.00	1.360	.77	.2050	.124
Rhode Island	205.76	171.54	418.50	379.70	.820	.95	.0720	.096
South Carolina	24.26	17.82	33.59	24.45	.670	.55	.3510	.380
South Dakota	12.64	6.46	15.84	4.98	2.080	.95	.3400	.200
Tennessee	51.48	33.10	56.86	38.90	1.080	.80	.3780	.390
Texas	76.92	34.08	37.80	15.77	2.540	1.35	.3910	.400
Utah	91.15	30.84	9.77	2.66	2.150	.79	.4000	.180
Vermont	71.86	39.07	112.22	62.19	2.870	1.65	.4620	.348
Virginia	60.39	13.27	80.08	17.08	1.560	.37	.3720	.146
Washington	187.25	44.88	118.87	21.48	6.950	2.77	.7900	.550
West Virginia	77.55	34.12	103.39	37.18	2.030	.93	.2120	.350
Wisconsin	130.50	34.30	178.81	39.47	4.230	1.05	.4000	.140
Wyoming	44.06	9.45	6.86	3.54	4.590	1.04	.3700	.790
Weighted averages	98.22	37.01	80.79	26.77	2.620	1.05	.3500	.230

[1] Based on the 1910 United States Census.
[2] Based on the 1900 United States Census.
[3] Based on the 1912 United States Census.
[4] Based on the 1902 United States Census.

TABLE 4.—*Road and bridge bonds outstanding January 1, 1915.*

State.	Total State and local bonds.	State bonds.	Local bonds.
Alabama	$5,418,000.00		$5,418,000.00
Arizona	295,000.00		295,000.00
Arkansas	1,467,066.00		1,467,066.00
California	32,277,000.00	$18,000,000	14,277,000.00
Colorado	90,500.00		90,500.00
Connecticut	7,000,000.00	7,000,000	(1)
Delaware	1,280,000.00		1,280,000.00
Florida	5,959,199.00		5,959,199.00
Georgia	127,500.00		127,500.00
Idaho	1,339,000.00	505,000	834,000.00
Illinois	798,761.55		798,761.55
Indiana	42,095,357.34		42,095,357.34
Iowa	1,960,780.00		1,960,780.00
Kansas	(1)	(2)	(1)
Kentucky	705,000.00		705,000.00
Louisiana	1,588,835.00		1,588,835.00
Maine	785,000.00	785,000.00	(1)
Maryland	12,853,700.00	12,410,000	443,700.00
Massachusetts	10,305,522.82	8,699,500	1,606,022.82
Michigan	10,389,029.43		10,389,029.43
Minnesota	1,411,889.00		1,411,889.00
Mississippi	8,327,172.00		8,327,172.00
Missouri	522,500.00		522,500.00
Montana	2,224,050.72		2,224,050.72
Nebraska	(1)		(1)
Nevada	38,000.00		38,000.00
New Hampshire	675,000.00	675,000	(1)
New Jersey	14,011,337.00		14,011,337.00
New Mexico	157,000.00	(3)	157,000.00
New York	76,822,088.00	65,000,000	11,822,088.00
North Carolina	8,955,300.00		8,955,300.00
North Dakota	(1)		(1)
Ohio	31,175,968.53	(1)	31,175,968.53
Oklahoma	1,440,000.00		1,440,000.00
Oregon	1,615,000.00		1,615,000.00
Pennsylvania	27,547,659.00		27,547,659.00
Rhode Island	1,800,000.00	1,800,000	(1)
South Carolina	460,000.00		460,000.00
South Dakota	(1)	(2)	(1)
Tennessee	6,898,277.00		6,898,277.00
Texas	14,615,017.00		14,615,017.00
Utah	541,500.00	260,000	281,500.00
Vermont	(1)		(1)
Virginia	5,650,994.93		5,650,994.93
Washington	1,555,000.00	190,000	1,365,000.00
West Virginia [4]	1,303,000.00		1,303,000.00
Wisconsin	281,078.00		281,078.00
Wyoming	(1)	(2)	(1)
Total	344,763,082.32	115,324,500	229,438,582.32

[1] No bonds reported.
[2] Constitution prohibits the State participating in works of internal improvement.
[3] In 1912 legislature authorized $500,000 State bonds, but none sold until 1915.
[4] Up to July 1, 1915.

TABLE 5.—*Road mileage.*

States.	Total road mileage.			Miles surfaced.			Percentage surfaced.			Increase or decrease in miles surfaced, 1909 to 1914.
	1914	1909	1904	1914	1909	1904	1914	1909	1904	
Ala.	55,446.00	49,639.00	50,089	4,988.50	3,263.93	1,720.00	8.99	6.58	3.43	1,724.57
Ariz.	12,075.00	5,987.00	5,987	253.43	273.00	217.00	2.09	4.56	3.62	−19.57
Ark.	50,743.00	36,445.00	36,445	1,097.50	1,085.25	236.00	2.16	2.97	.64	11.75
Cal.	61,039.00	48,069.00	46,653	10,279.73	8,587.75	8,803.00	16.84	17.87	18.87	1,691.98
Colo.	39,780.00	29,693.00	30,214	1,193.87	320.50	178.00	3.00	1.08	.59	873.37
Conn.	14,061.00	12,583.00	14,088	2,975.45	3,030.54	2,360.10	21.16	24.08	16.75	−55.09
Del.	3,674.00	3,000.00	3,000	243.50	186.44	66.00	6.62	6.22	2.20	57.06
Fla.	17,995.00	17,579.00	17,374	2,830.47	1,752.35	885.50	15.72	9.97	5.10	1,078.12
Ga.	80,669.00	82,230.00	57,203	12,342.12	5,978.00	1,634.00	15.30	7.27	2.86	6,364.12
Idaho.	24,396.00	18,403.00	18,163	679.00	510.50	212.00	2.78	2.77	1.16	168.50
Ill.	95,647.00	94,141.00	94,141	11,606.31	8,914.00	7,924.00	12.02	9.47	8.42	2,692.31
Ind.	73,347.00	67,996.00	68,306	30,962.40	24,955.75	23,877.00	42.20	36.70	34.96	6,006.65
Iowa.	104,074.00	102,427.00	102,448	614.57	2,505.10	1,664.00	.59	2.45	1.62	−1,890.53
Kans.	111,052.00	98,302.00	101,196	1,148.85	374.71	273.20	1.03	.38	.27	774.14
Ky.	57,916.00	53,744.00	57,137	12,403.28	10,114.95	9,486.00	21.40	18.82	16.60	2,288.33
La.	24,563.00	24,962.00	24,897	2,067.62	329.50	34.00	8.42	1.32	.14	1,738.12
Me.	23,537.00	25,528.00	25,528	2,762.36	2,703.06	2,323.50	11.74	10.59	9.10	59.30
Md.	16,459.00	16,773.00	16,773	2,489.26	2,142.30	1,570.00	15.10	12.77	9.36	346.96
Mass.	18,681.00	17,272.00	17,092	8,505.89	8,463.18	7,843.80	45.53	49.00	45.89	42.71
Mich.	74,190.00	68,906.00	69,296	7,828.51	6,900.54	7,025.50	10.55	10.01	10.14	927.97
Minn.	93,517.00	79,323.00	79,324	3,967.83	5,416.85	6,247.50	4.24	6.83	7.87	−1,449.02
Miss.	45,779.00	39,619.00	38,698	2,133.35	342.25	149.00	4.66	.86	.31	1,791.10
Mo.	96,041.00	107,923.00	108,133	6,712.57	4,755.50	2,733.00	6.98	4.40	2.53	1,957.07
Mont.	39,204.00	23,319.00	22,419	609.25	95.00	65.00	1.55	.41	.28	514.25
Nebr.	80,272.00	80,338.00	79,462	1,204.54	248.55	23.00	1.50	.31	.03	955.99
Nev.	12,182.00	12,751.00	12,585	262.00	46.00	64.00	2.14	.36	.51	216.00
N. H.	14,020.00	15,116.00	15,116	1,659.63	1,448.48	1,293.00	11.83	9.58	8.55	211.15
N. J.	14,817.00	14,842.00	14,842	5,897.46	3,377.86	2,422.30	39.80	22.76	16.32	2,519.60
N. Mex.	11,873.00	16,920.00	15,326	261.50	104.00	2.00	2.20	.61	.01	157.50
N. Y.	79,398.00	79,279.00	73,798	15,635.90	12,787.36	5,876.00	19.60	16.13	7.96	2,848.54
N. C.	50,758.00	48,285.00	49,763	6,003.75	2,313.00	1,259.00	11.82	4.79	2.53	3,690.75
N. Dak.	68,796.00	61,593.00	59,332	955.00	140.00	212.00	1.38	.23	.36	815.00
Ohio.	86,354.00	88,861.00	69,439	30,569.17	24,106.00	23,460.00	35.16	27.13	33.79	6,463.17
Okla.	107,916.00	71,325.00	43,554	121.60	361.00	.....	.11	.50	.....	−239.40
Oreg.	36,819.00	29,475.00	34,258	4,726.40	2,799.25	2,589.00	12.83	9.49	7.56	1,927.15
Pa.	91,555.84	87,386.79	99,777	9,982.88	3,364.76	2,160.80	10.90	3.84	2.17	6,618.12
R. I.	2,170.00	2,120.75	2,361	693.42	1,042.07	1,021.50	31.95	49.14	43.27	−348.65
S. C.	42,226.00	32,075.00	41,830	3,270.50	3,534.75	1,878.00	7.74	11.02	4.49	−264.25
S. Dak.	96,306.00	56,354.00	59,295	363.00	286.00	151.00	.37	.50	.25	77.00
Tenn.	46,050.00	45,913.00	48,989	8,102.00	5,353.50	4,285.00	17.59	11.66	8.75	2,748.50
Tex.	128,960.00	128,971.00	121,409	10,526.79	4,896.00	2,128.00	8.16	3.80	1.75	5,640.00
Utah.	8,810.00	8,320.00	7,090	1,153.75	1,018.00	608.00	13.09	12.23	8.57	135.75
Vt.	14,249.00	14,406.00	14,521	1,442.03	2,650.63	1,953.50	10.12	18.40	13.45	−1,208.60
Va.	53,388.00	43,399.00	51,812	3,909.57	1,902.75	1,600.00	7.32	4.38	3.09	2,006.82
Wash.	42,428.00	34,283.60	31,998	4,922.09	4,520.68	1,976.50	11.61	13.19	6.17	401.41
W. Va.	32,024.00	32,109.00	26,178	1,064.97	591.40	254.50	3.30	1.84	.97	473.57
Wis.	75,707.00	61,090.00	63,593	13,399.47	10,167.33	10,633.20	17.60	16.64	16.72	3,232.14
Wyo.	14,797.00	10,569.00	10,447	468.50	416.00	153.00	3.10	3.94	1.46	52.50
Total.	2,445,760.84	2,199,645.14	2,151,379	237,291.54	190,476.32	153,530.40	10.52	8.66	7.14	66,823.93

TABLE 6.—*Relation of total mileage and surfaced mileage to area and rural population.*

States.	Total mileage.						Surfaced mileage.					
	Per square mile of area.			Per 1,000 rural population.			Per square mile of area.			Per 1,000 rural population.		
	1914	1909	1904	1914[1]	1909[1]	1904[2]	1914	1909	1904	1914[1]	1909[1]	1904[2]
Alabama	1.08	0.96	0.97	31.3	28.0	31.5	0.097	0.063	0.033	2.82	1.84	1.06
Arizona	.11	.05	.05	85.5	42.4	58.1	.002	.002	.002	1.79	1.93	2.10
Arkansas	.96	.69	.67	36.9	26.5	30.3	.02	.02	.004	.80	.79	.196
California	.39	.31	.29	67.2	52.9	65.9	.066	.055	.056	11.32	9.46	12.45
Colorado	.38	.28	.30	100.9	75.3	108.3	.011	.003	.002	3.02	.81	.64
Connecticut	2.92	2.61	2.92	122.3	109.5	121.7	.617	.629	.490	25.89	26.39	20.39
Delaware	1.86	1.53	1.53	34.9	28.5	30.3	1.24	.095	.03	2.32	1.77	.667
Florida	.33	.32	.31	33.6	32.9	41.2	.052	.032	.016	5.29	3.28	2.09
Georgia	1.37	1.40	.96	38.9	39.7	30.5	.210	.101	.028	5.96	2.88	.873
Idaho	.29	.22	.20	95.4	71.9	119.6	.008	.006	.002	2.65	1.99	1.39
Illinois	1.71	1.68	1.60	44.2	43.5	42.6	.207	.159	.141	5.37	4.12	3.59
Indiana	2.03	1.88	1.90	47.1	43.6	41.3	.858	.692	.662	19.88	16.02	14.44
Iowa	1.87	1.84	1.84	67.3	66.3	61.7	.001	.045	.029	.39	1.62	1.00
Kansas	1.35	1.20	1.20	92.7	82.1	88.8	.014	.004	.003	.96	.31	.24
Kentucky	1.44	1.33	1.42	33.4	30.9	34.0	.308	.251	.236	7.15	5.83	5.64
Louisiana	.54	.55	.54	21.1	21.5	24.5	.05	.007	.0007	1.78	.0284	.0334
Maine	.79	.85	.85	65.3	70.7	71.5	.092	.090	.078	7.65	7.49	6.51
Maryland	1.65	1.68	1.68	25.8	26.3	28.1	.25	.22	.15	3.90	3.36	2.63
Massachusetts	2.32	2.15	2.13	77.5	71.6	71.7	1.058	1.053	.976	35.29	35.11	32.92
Michigan	1.29	1.20	1.20	50.0	46.4	47.2	.133	.120	.122	5.28	4.65	4.78
Minnesota	1.15	.98	1.00	76.3	64.7	68.7	.036	.066	.077	2.42	4.42	5.42
Mississippi	.98	.85	.83	28.8	24.9	27.0	.046	.007	.003	1.34	.215	.104
Missouri	1.39	1.57	1.50	50.6	56.9	54.6	.097	.069	.039	3.54	2.51	1.38
Montana	.27	.16	.15	161.5	96.1	141.2	.004	.0006	.0004	2.51	.39	.41
Nebraska	1.04	1.04	1.00	91.0	91.1	97.6	.001	.003	.0003	1.36	.28	.03
Nevada	.11	.12	.11	177.8	186.1	358.1	.002	.0004	.0006	3.82	.67	1.82
New Hampshire	1.55	1.67	1.67	79.9	86.2	81.5	.184	.160	.143	9.47	8.25	6.98
New Jersey	1.97	1.97	1.97	23.5	23.6	26.7	.784	.45	.32	9.4	5.4	4.4
New Mexico	.09	.14	.12	42.3	60.3	91.3	.002	.0008	.0002	.93	.37	.01
New York	1.66	1.67	1.54	41.2	41.1	37.4	.328	.268	.12	8.1	6.6	2.98
North Carolina	1.04	.99	1.00	26.8	25.5	29.1	.123	.047	.025	3.18	1.22	.087
North Dakota	.98	.88	.84	133.8	119.8	200.6	.013	.002	.003	1.86	.27	.71
Ohio	2.12	2.18	1.79	41.0	42.2	32.1	.750	.591	.575	14.54	11.47	10.86
Oklahoma	1.55	1.02	1.10	80.7	53.3	59.5	.0017	.0052	.000	.0912	.27	.000
Oregon	.38	.31	.36	100.6	80.5	122.2	.049	.029	.027	12.89	7.65	9.23
Pennsylvania	2.22	1.95	2.21	30.2	28.8	34.9	.22	.075	.048	3.29	1.11	.76
Rhode Island	2.03	1.99	2.21	120.8	118.1	112.9	.649	.977	.957	38.59	58.03	48.83
South Carolina	1.38	1.05	1.30	32.7	24.8	35.7	.107	.115	.061	2.53	2.74	1.60
South Dakota	1.25	.73	.70	189.8	111.1	164.4	.004	.003	.002	.72	.56	.42
Tennessee	1.10	1.10	1.17	26.4	26.3	28.9	.194	.128	.102	4.64	3.07	2.52
Texas	.49	.49	.46	43.6	43.6	48.0	.401	.186	.081	3.56	1.65	.841
Utah	.11	.10	.08	43.9	41.5	41.3	.014	.012	.007	5.76	5.08	3.55
Vermont	1.56	1.58	1.59	76.2	77.0	71.0	.158	.291	.214	7.71	14.17	9.55
Virginia	1.32	1.07	1.29	33.7	27.3	34.2	.097	.047	.039	2.46	1.20	1.05
Washington	.63	.51	.48	79.0	63.9	104.3	.073	.067	.029	9.17	8.43	6.44
West Virginia	1.33	1.33	1.06	32.3	32.3	31.4	.044	.002	.001	1.07	.595	.31
Wisconsin	1.37	1.10	1.17	56.9	45.9	49.7	.242	.184	.192	10.08	7.64	8.31
Wyoming	.15	.11	.10	147.9	102.8	158.5	.005	.004	.0015	4.56	4.05	2.32
Weighted averages	.82	.74	.72	49.5	44.6	47.6	.086	.064	.052	5.21	3.96	3.39

[1] Based on the 1910 U. S. Census.
[2] Based on the 1900 U. S. Census.

TABLE 7.—*Types of surfaced roads, 1914.*

State.	Macadam.	Bituminous macadam.	Gravel.	Sand clay.	Brick.	Concrete.	Miscellaneous.	Total surfaced.
	Miles.	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*
Alabama	431.00	31.00	2,589.50	1,916.00	.....	1.00	20.00	4,988.50
Arizona	11.23	13.50	125.70	45.00	.....	.....	58.00	253.43
Arkansas	362.50	4.00	535.00	175.00	.....	21.00	.....	1,097.50
California	837.40	877.90	3,563.59	582.25	.....	929.19	3,489.40	10,279.73
Colorado	3.00	.....	574.25	450.12	.....	2.25	164.25	1,193.87
Connecticut	923.42	128.28	1,057.93	840.27	1.33	24.22	.....	2,975.45
Delaware	161.50	35.50	21.00	.....	.....	.....	25.50	243.50
Florida	829.16	42.80	42.50	1,163.00	256.24	12.00	484.77	2,830.47
Georgia	234.00	87.00	1,073.00	10,778.00	1.72	.40	168.00	12,342.12
Idaho	42.50	12.00	168.00	449.00	.....	4.50	3.00	679.00
Illinois	1,675.11	121.53	7,052.30	2,467.95	82.92	148.80	57.70	11,606.31
Indiana	10,291.29	168.35	20,264.59	150.25	34.75	53.17	.....	30,962.40
Iowa	171.30	.....	413.00	23.00	.....	5.77	1.50	614.57
Kansas	194.30	.....	151.85	758.50	4.10	1.35	38.75	1,148.85
Kentucky	10,628.00	59.03	1,713.50	.....	.25	2.50	.....	12,403.28
Louisiana	.....	.....	430.00	1,448.00	.....	.....	189.62	2,067.62
Maine	55.36	43.93	1,139.36	2.26	.05	10.51	1,510.89	2,762.36
Maryland	488.70	1,042.31	243.95	69.00	.....	189.34	455.96	2,489.26
Massachusetts	834.30	1,337.33	6,289.57	.....	.....	.....	44.69	8,505.89
Michigan	1,021.19	94.50	5,230.25	1,375.27	.....	107.30	.....	7,828.51
Minnesota	120.25	19.00	2,825.25	985.33	.50	17.50	.....	3,967.83
Mississippi	86.00	29.50	1,281.10	604.25	.....	14.00	118.50	2,133.35
Missouri	1,531.05	59.00	3,671.50	1,442.25	1.00	2.77	5.00	6,712.57
Montana	78.00	.....	514.25	14.00	.....	.....	3.00	609.25
Nebraska	39.21	1.30	21.00	1,131.10	2.40	7.53	2.00	1,204.54
Nevada	2.00	.....	193.00	67.00	.....	.....	.....	262.00
New Hampshire	61.87	154.26	1,013.70	270.90	.....	7.07	151.83	1,659.63
New Jersey	1,809.24	417.63	2,858.52	561.40	.....	.....	250.67	5,897.46
New Mexico	.....	5.00	184.00	72.50	.....	.....	.....	261.50
New York	5,717.97	3,168.63	5,802.97	.....	148.53	244.19	553.61	15,635.90
North Carolina	1,111.00	9.00	529.00	4,313.50	.....	1.25	40.00	6,003.75
North Dakota	.....	.....	955.00	.....	.....	.....	.....	955.00
Ohio	12,903.87	1,066.29	15,385.93	211.00	640.41	315.67	46.00	30,569.17
Oklahoma	6.70	3.00	6.90	105.00	.....	.....	.....	121.60
Oregon	1,000.72	137.25	3,060.15	300.00	.....	28.41	199.87	4,726.40
Pennsylvania	[1] 1,881.80	[1] 198.33	[1] 235.19	.....	[1] 269.33	.....	7,398.23	982.88
Rhode Island	352.92	107.40	230.10	.....	.....	.....	3.00	693.42
South Carolina	27.50	3.50	85.00	3,101.00	.....	.....	53.50	3,270.50
South Dakota	.....	10.00	212.00	129.00	.....	.....	12.00	363.00
Tennessee	4,550.50	148.00	2,788.00	613.00	.50	2.00	.....	8,102.00
Texas	511.00	181.00	5,258.98	3,490.48	.....	11.25	1,074.08	10,526.79
Utah	49.00	15.50	685.75	401.00	.....	2.50	.....	1,153.75
Vermont	1.94	.....	1,165.42	.....	.....	.....	274.67	1,442.03
Virginia	1,177.89	255.77	822.09	1,511.65	.....	.....	142.17	3,909.57
Washington	502.82	165.52	3,924.48	83.50	26.35	79.42	140.00	4,922.09
West Virginia	771.92	62.95	20.50	.....	121.10	18.50	70.00	1,064.97
Wisconsin	1,408.00	183.00	9,597.00	2,054.00	2.40	83.07	72.00	13,399.47
Wyoming	.....	.....	52.50	.....	.....	.....	416.00	468.50
Total	64,898.43	10,499.79	116,058.12	44,154.73	1,593.88	2,348.43	17,738.16	257,291.54
Per cent	25.22	4.08	45.11	17.16	.62	.91	6.90	100.00

[1] State roads only.

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